

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

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In the Matter of Minnesota Power's
Application for Approval of its 2002-2016
Resource Plan

ISSUE DATE: May 23, 2003

DOCKET NO. E-015/RP-01-1626

ORDER APPROVING THE 2001
RESOURCE PLAN, VARYING THE NEXT
RESOURCE PLAN FILING DATE AND
SETTING REQUIREMENTS FOR THE
NEXT RESOURCE PLAN FILING

PROCEDURAL HISTORY

On November 1, 2001, Minnesota Power (MP) filed its 2002-2016 Resource Plan (the 2001 Resource Plan) pursuant to Minn. Stat. § 216B.2422 and Minn. Rules part 7843.0100 through 7843.0600.

On November 27, 2001, the Minnesota Department of Commerce (DOC) filed its comments recommending that MP's resource plan be accepted as complete upon MP's filing of certain specified supporting information.

On December 7, 2001, MP filed its responses to the DOC's request for further information.

On December 10, 2001, MP requested that the Commission approve an agreement between the Company and the DOC that MP file a supplement to its 2001 Resource Plan by May 31, 2002, to further address issues identified by the DOC.

On December 26, 2001, the Commission issued its ORDER ACCEPTING AGREEMENT TO FILE SUPPLEMENTAL INFORMATION BY MAY 31, 2002. In this Order the Commission: a) found that MP met the resource plan filing requirements except for certain items; b) accepted the agreement between MP and the DOC regarding the filing of supplemental information by MP; and c) required MP to file the agreed upon supplemental information by May 31, 2002.

On May 31, 2002, MP submitted its supplemental filing.

On October 7, 2002, the DOC filed comments and analysis based on MP's resource plan and the supplemental filing. The DOC recommended that MP's proposed resource plan be denied and that MP be required to refile its resource plan.

On December 9, 2002, MP filed reply comments requesting that its 2002-2016 Resource Plan be approved. MP's comments included additional information that had been requested by the DOC.

On February 10, 2003, the DOC filed reply comments recommending approval of MP's Resource Plan, as amended by MP's December 9, 2003 reply comments, and further recommended that MP be required to file additional information in its next resource plan. The DOC's recommendation was based on the resolution of the issues between MP and the DOC and on commitments by MP to address long-term issues.

This matter came before the Commission on May 1, 2003.

FINDINGS AND CONCLUSIONS

I. Background

A. The Resource Planning Process

A utility, in seeking to meet the electricity demanded by its customers, can supply electricity through a combination of generating and purchasing power. It also can manage its customers' demands by encouraging customers to conserve electricity, or to shift activities requiring electrical energy to periods when the system-wide demand for electricity is less. A resource plan contains both demand-side and supply-side resource options that a utility can use over the forecast period.

Generally, the resource planning statute and rules require utilities to file biennial reports on (1) the projected energy needs of their service areas over the next 15 years; (2) their plans for meeting projected need; (3) the analytical process they used to develop their plans for meeting projected need; and (4) their reasons for adopting the specific resource mix proposed.

These requirements are designed to strengthen utilities' long term planning processes by providing input from the public, other regulatory agencies, and the Commission. They are also designed to ensure that utilities making resource decisions give adequate consideration to factors whose public policy importance has grown in recent years, such as the environmental and socioeconomic impact of different resource mixes. The Commission must approve, reject or modify the proposed resource plan consistent with the public interest.¹

B. Minnesota Power

MP is an investor owned vertically integrated utility providing electric service to approximately 113,500 retail customers and supplying wholesale electricity to 14 municipal systems in northeastern Minnesota. Twelve of MP's largest industrial customers, including taconite producers, paper and pulp mills, and pipeline companies, buy about half of the electricity sold by MP. The Company also sells electricity to approximately 14,000 customers in northwestern Wisconsin through its Superior Water, Light and Power subsidiary.

¹ Minn. Stat. § 216B.2422, subd. 2.

II. MP's Resource Plan

A. Forecast of Customer Requirements

MP started its resource planning with the forecast of customer requirements. MP included four forecast scenarios: expected; high; low; and large power contract expiration. It used the expected scenario for planning purposes. The expected scenario was based on levels of economic activity predicted by national economists, industry experts and economic and demographic models and databases. The high, low and contract expiration scenarios were addressed by contingency plans.

MP compared the forecast to MP's existing portfolio of capacity resources in order to determine capacity need for the planning period. If a capacity need existed, power supply options would be identified and evaluated for cost, reliability, availability and environmental acceptability.

MP's analysis of its surplus/deficit capacity indicated that MP's first capacity deficit would be a 4 MW deficit in the Winter of 2011 and would increase to 121 MW in Winter 2016. Its first Summer deficit would be 9 MW in 2012 and would increase to 107 MW in 2016.²

B. Contingencies Affecting MP's Resource Plan

1. Potential Retail Load Loss

MP's five Large Power taconite customers and its five Large Power paper customers account for approximately 50% of MP's total demand requirements. Based on nationwide economic conditions, and the current status of the steel and paper industries, significant reductions in MP's retail load due to the discontinued operation of one of its Large Power customers is likely. MP reported that two of its Large Power customers are in Chapter 11 bankruptcy (National Steel Corporation and USG), one Large Power customer's majority-owner is in Chapter 11 bankruptcy (Hibtac), and one Large Power customer is seeking commitments for its taconite pellet output for the majority of 2003 (EVTAC). Any of these situations could cause MP's retail energy supply obligations to be reduced on short notice.

Because of these situations, MP believes that a low-load forecast scenario during the resource plan forecast period is likely. If that occurs and MP is faced with a significant loss of retail load, it would first attempt to mitigate damages by selling power in the wholesale market. This alternative, however, may not mitigate the loss of a 24-hour, seven day a week retail customer load.

2. Potential Loss of Capacity from Square Butte

Another uncertainty for MP relates to its output from the Square Butte facility jointly owned with Minnkota Power Cooperative (Minnkota). Under a joint ownership agreement Minnkota has the option to increase its share of the output of Square Butte Electric Cooperative's Milton R. Young Unit #2 at Center, North Dakota (Square Butte) with a series of four annual option exercises.

² This forecast does not include capacity from Taconite Harbor.

Currently, Square Butte output is shared by MP (about 71%) and Minnkota (about 29%). If, or when, all four of these options are exercised, MP's share of Square Butte capacity would be reduced by approximately 93MW by 2010. The first option exercise of 23 MW could occur, with 24-month advance notice, by January 1, 2006.

If Minnkota exercised its Square Butte options at the earliest possible dates (2006 through 2009) and the expected load forecast occurred, MP's first capacity deficit would be 2MW in the summer of 2006. That deficit extends to 215 MW in the summer of 2016.

MP indicated that once Minnkota has given MP notice of the exercise of its option, MP would re-assess its resource needs and likely go to the wholesale market to replace the lost Square Butte capacity. Smaller deficits in 2006 and 2007 of less than 50 MW would not warrant a formal competitive bidding. However, MP agreed to the DOC's recommendation that it use the competitive bidding process as a method to address long-term capacity needs that may result from the exercise of the Square Butte options by Minnkota.

3. Additional Capacity from Taconite Harbor

In its November 1, 2001 filing, MP removed from its 2001 Resource Plan's capacity forecast 225MW of accredited Taconite Harbor capacity to reflect the closing of LTV Steel Mining Company (LTV) and the minimal operation of its Taconite Harbor generating units during the bankruptcy proceeding. The presence of the LTV units on MP's system had historically resulted in significant benefits from a load and capability perspective. Since LTV's Hoyt Lakes mining operations had utilized only about 100MW of the 225MW of generating capacity, 125 MW had been available to be utilized on MP's system.

By the time MP filed its Supplement on May 31, 2002, MP had completed its acquisition of the 225 MW Taconite Harbor generating facility³ and had accredited 200MW of that capacity with MAPP. MP argued that although the Taconite Harbor plant is a non-rate-based asset intended to be marketed primarily to the wholesale market, any capacity not sold to others would be available to potentially offset any MP capacity deficit that could occur during the 2002-2016 planning period.

However, upon the objection of the DOC to MP's including the capacity from the Taconite Harbor plant in the baseline load and capability forecast, MP removed it from its final calculations for resource planning purposes.

C. Evaluating Capacity Sources to Meet MP's Resource Needs

MP developed a Resource Option Matrix which provided information on a broad and diverse set of renewable and non-renewable power supply resources including hydro capacity, pulverized

³ *In the Matter of Minnesota Power's Petition for Approval of Intra-Company Transfer of Taconite Harbor Electric Generation Station and Associated Assets from Rainy River Energy Corporation-Taconite Harbor to Minnesota Power*, Docket No. E-015/AI-01-1988, ORDER APPROVING PETITION WITH MODIFICATIONS.

coal, natural gas-fired combined cycle combustion turbine, wind turbine, biomass, solar photovoltaic, fuel cells, power purchases, natural gas-fired single cycle combustion turbine and large cogeneration plant (coal/wood). MP chose six criteria to characterize the resource options, with an emphasis on economics and all-in price projections. MP reported that the Resource Option Matrix data showed the following:

- 1) only power purchases had an all-in-price projection of less than \$40/MWh;
- 2) only power purchases would give MP the flexibility to buy only as much as it would need and only for the term it would be needed;
- 3) pulverized coal, natural gas combined cycle, power purchases and large cogeneration plant each had all-in-price projections below \$50/MWh;
- 4) addition of hydroelectric capacity was a least cost renewable option

D. Capacity Source Selection

MP indicated that it had no additional resource needs within a five-year action plan timeframe. MP argued that given the magnitude of industrial load reduction uncertainty, MP expects that future loss of industrial load will eliminate and even potentially overshadow any capacity deficit projected in the 2001 Resource Plan.

It was MP's position that because its loads were so uncertain, it would not be prudent for MP to commit to build a plant or make a long term purchase to meet the potential later-year resource needs at this time. MP indicated that the Resource Option Matrix data supported the conclusion that capacity purchases presently appear to be the least cost and most flexible supply resource option should MP actually realize the capacity deficits identified in its forecast.

E. DSM as a Resource Option

Over the course of the last twelve years MP has spent \$71 million on Demand Side Management (DSM) programs, which is more than 50% above the 1.5% minimum spending requirement.⁴ MP's expenditures were directed primarily to the Large Power class of customers until these customers were allowed to opt out of the Conservation Improvement Program (CIP) program, approximately three years ago.

After that MP focused its efforts on developing DSM in commercial and residential customers. MP indicated that with the help of the DOC it established goals to attain higher levels of DSM for these customers. MP believes that current goals can be an important contribution to the resource mix, but MP does not believe DSM can be treated as a direct substitute for supply side resources.

Given that MP has no need for capacity in the next eight years, MP indicated that its DSM is optimized at the minimum spending levels. For the remainder of the planning period where capacity needs are forecast to occur, MP stated that it did not believe that DSM was an appropriate consideration. First, MP argued, MP has had difficulty meeting minimum spending criteria for the residential and commercial classes of customers. MP does not believe that goals exceeding present goals would be achievable or cost beneficial. Second, it was MP's position that increased levels of DSM will be difficult to achieve and riskier for system reliability. Lastly, MP argued that

⁴ Minn. Stat. § 216B.241, Subd. 1a(2).

it is unlikely that DSM would significantly impact the supply-side resource needs of MP. MP, however, stated that it will continue to monitor this issue. As a projected resource need materializes, MP will consider the issue of additional DSM as a resource option.

F. Meeting Renewable Energy Preference

Minn. Stat. § 216B.2422, subd. 2 requires that:

“As part of its resource plan filing, a utility shall include the least cost plan for meeting 50 and 75 percent of all new and refurbished capacity needs through a combination of conservation and renewable energy resources.”

MP argued that since there will be no “new or refurbished capacity” within MP’s five year action plan, the 50% and 75% renewable consideration set forth in the statute does not presently apply. Nonetheless, MP indicated that to meet 50% or 75% of a modest capacity deficit it would primarily focus on the expanded use of hydro and biomass resources at existing generation sites.

MP indicated that the hydro and biomass capacity options were more expensive than several non-renewable capacity options when evaluated on an all-in-cost basis. It argued that power purchases from non-renewable capacity resources were expected to remain the least cost capacity option and continue to be available in sufficient quantities to remedy projected capacity deficits for the foreseeable future.

G. Competitive Bidding

MP agreed to use the competitive bidding process as a method to address long-term capacity needs that may actually result if the loss of Large Power load does not materialize and the Square Butte option exercises causes MP to have an immediate capacity need.

III. Comments of the DOC

In its October 7, 2002 comments, the DOC recommended that the Commission reject MP’s proposed plan and file a new plan. The DOC recommended, among other things, that in its new plan MP exclude capacity from the Taconite Harbor plant, which would mean a capacity deficit starting in the winter of 2011. Further, the DOC noted that if Minnkota exercises its option to acquire 93 MW of capacity owned by MP, the Company might be facing a deficit as early as 2006. The DOC recommended that MP address this issue in its new filing as well. In addition, the DOC recommended that MP treat DSM as a resource option in an integrated manner with supply-side options in its new filing.

After receiving MP’s reply comments, the DOC concluded that MP had made a significant effort to address the DOC’s comments and that MP’s Resource Plan filing, as amended by MP’s December 9, 2002 reply comments, should be approved. Further, the DOC noted that the forecasting data used for MP’s filing was almost two years old and requiring MP to refile further information at this time would be an inefficient use of resources. However, the DOC recommended, and the Company agreed, that MP take the following actions in preparing its next resource plan filing:

1. Determine its available resources based on the Company's retail committed resources, and then develop a reasonable plan to meet any remaining needs of retail customers
2. Develop a competitive bidding process that would address any and all of its future capacity deficits⁵
3. Work with the Department and other interested parties to develop a mutually acceptable method of modeling its supply-side resources
4. Work with the Department and other interested parties to develop a mutually acceptable method of integrating its supply-side and demand-side resources
5. Provide a contingency plan addressing how the Company will meet its future capacity needs if Minnkota exercises its options
6. Develop econometric methods wherever possible to forecast energy requirements
7. Discuss in detail the reasons why the Company chose judgement over an analytical statistical method
8. Either further explain its use of judgement in forecasting energy requirements or provide documentation of the judgements used
9. For each forecasting method chosen, explain its rationale for doing so
10. Update its analysis relative to the availability of its coal-fired units during the planning period
11. Provide an update on the status of the re-licensing proceedings for its hydro stations
12. Report on its progress towards meeting the renewable energy goals of Minnesota Statutes 216B.1691, including: (1) the amount and percent of electric energy generated by an eligible energy technology the Company plans to provide its retail customers from 2005 to the end of the IRP planning period, and (2) the amount and percent of electric energy generated by biomass energy technologies the Company plans to provide its retail customers from 2010 to the end of the IRP period; (the information to be provided should use the format of tables 6 and 7, page 18 of the Department's March 8, 2001 comments in Docket No. E-001/RP-01-1628)
13. Provide a discussion of its planned and potential transmission/subtransmission projects resulting from future load growth, generation resource decisions, and anticipated transmission constraints
14. Provide an update on its role in MISO planning functions and its role in preparing the biennial Minnesota Transmission Projects Report
15. Include a description of existing and planned DSM projects
16. Include a description of MP's most current DSM evaluation for technical, economical, and achievable potential
17. Include an analysis to determine whether and how its NO_x and SO₂ strategies are reasonable methods of compliance
18. Continue to monitor the implementation of control strategy plans by Minnesota and North Dakota, and if applicable include contingency plans for complying with them
19. Include an update on its mercury regulations, its mercury-reduction goals, strategies and achievements to date

⁵ The Company and the DOC agreed to modify this to require the Company to develop a competitive bidding process that would address future capacity deficits based on discussions with the DOC and tailored for MP's circumstances.

20. Monitor and report on industry-based initiatives for cutting greenhouse gas emissions
21. Develop a CO₂ contingency plan to see how resource mix changes can lower the cost of meeting customer demand under different forms of regulation
22. Develop a multi-emissions strategy that will assess the current status of its plants, evaluate technical and economical feasibility of control options, and propose a plan prioritizing options

IV. Commission Analysis and Action

The Commission considered three separate matters related to MP's current filing as well as future planning and filings. They were: a) the acceptance of MP's 2001 resource plan filing; b) the request by MP for an extension from November 1, 2003 to August 1, 2004 for filing of MP's next resource plan; and c) items to be addressed by MP in preparing its next resource plan. Each will be discussed in turn.

A. The Acceptance of MP's 2001 Resource Plan

The Commission agrees with the DOC that MP's 2001 resource plan should be accepted. The Company has shown improvements in its planning process, has accepted many of the recommendations put forth by the DOC, and made progress on others. The Commission agrees that with these changes the resource plan meets all applicable statutory and rule requirements and should be accepted. However, the Commission will require the Company to address certain issues in preparing its next plan, as discussed below.

B. MP's Request for an Extension of its Next Resource Plan Filing

MP requested that its next resource plan filing date be extended from November 1, 2003⁶ to August 1, 2004.

Minnesota rules⁷ provide that the Commission may grant a variance when the following requirements are met:

- enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule;
- granting the variance would not adversely affect the public interest; and
- granting the variance would not conflict with standards imposed by law.

⁶ Minnesota Rules part 7843.0300, subp.2 requires a utility to file a resource plan every two years.

⁷ Minnesota Rules, part 7829.3200, subp.1.

In this case the Commission finds that MP's request meets the standards set forth above. Enforcement of the rule would not adversely affect the public interest and would impose an excessive burden on MP. The next filing date would be approximately six months from the approval of the current plan and there are numerous items that are to be addressed by MP in preparing its next resource plan. To address all of these in this short period of time would not only be excessively burdensome but would require the plan to be based on the load and capability forecast of the current filing, which is more than two years old, rather than a future forecast. By 2004, MP will have a clearer understanding of near term large power status and may have received notice from Minnkota Power Cooperative regarding the exercise of its options. Finally, granting the extension is not in conflict with other legal standards.

For these reasons the Commission will grant MP's request for an extension until August 1, 2004 to file its next resource plan.

C. Items to be Included in MP's next Resource Plan

The Commission agrees with the DOC that the items, recommended by the DOC and agreed to by MP, are reasonable and should be included in MP's next resource plan filing. The Commission will direct the Company to address the issues listed in Ordering paragraph 2, below, in its next resource plan filing.

ORDER

1. MP's 2001 resource plan (as supplemented on May 31, 2002 and amended by the Company's December 9, 2002 reply comments) is hereby approved.
2. MP shall do and/or include, in preparing its next resource plan filing, the following items:
 - a. determine its available resources based on the Company's retail committed resources, and then develop a reasonable plan to meet any remaining needs of retail customers
 - b. develop a competitive bidding process that would address future capacity deficits based on discussions with the Department and tailored for MP's circumstances
 - c. work with the Department and other interested parties to develop a mutually acceptable method of modeling its supply-side resources
 - d. work with the Department and other interested parties to develop a mutually acceptable method of integrating its supply-side and demand-side resources
 - e. provide a contingency plan addressing how the Company will meet its future capacity needs if Minnkota exercises its options on the Young 2 capacity at Square Butte
 - f. develop econometric methods wherever possible to forecast energy requirements

- g. discuss in detail the reasons why the Company chose judgement over an analytical statistical method in its forecasts, and provide documentation of any judgements used
- h. for each forecasting method chosen, explain the rationale for doing so
- i. update its analysis relative to the availability of its coal-fired units during the planning period
- j. provide an update on the status of the re-licensing proceedings for its hydro stations
- k. report on its progress towards meeting the renewable energy goals of Minnesota Statutes 216B.1691, including: (1) the amount and percent of electric energy generated by an eligible energy technology the Company plans to provide its retail customers from 2005 to the end of the IRP planning period, and (2) the amount and percent of electric energy generated by biomass energy technologies the Company plans to provide its retail customers from 2010 to the end of the IRP period; (the information to be provided should use the format of tables 6 and 7, page 18 of the Department's March 8, 2001 comments in Docket No. E-001/RP-01-1628)
- l. provide a discussion of its planned and potential transmission/subtransmission projects resulting from future load growth, generation resource decisions, and anticipated transmission constraints
- m. provide an update on its role in MISO planning functions and its role in preparing the biennial Minnesota Transmission Projects Report
- n. include a description of existing and planned DSM projects
- o. include a description of MP's most current DSM evaluation for technical, economical, and achievable potential
- p. include an analysis to determine whether and how its NO_x and SO₂ strategies are reasonable methods of compliance
- q. continue to monitor the implementation of control strategy plans by Minnesota and North Dakota, and if applicable include contingency plans for complying with them
- r. include an update on mercury regulations and the Company's mercury-reduction goals, strategies and achievements to date
- s. monitor and report on industry-based initiatives for cutting greenhouse gas emissions
- t. develop a CO₂ contingency plan to see how resource mix changes can lower the cost of meeting customer demand under different forms of regulation

- u. develop a multi-emissions strategy that will assess the current status of its plants, evaluate technical and economical feasibility of control options, and propose a plan prioritizing options
- 3. MP shall file its next resource plan by August 1, 2004.
- 4. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary

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